

## Chapter 28

# The Use of Virtual Environments for Knowledge Sharing in Distance Learning Education, with a View to Informing Industry

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### ABSTRACT

*As social media and virtual world technology become increasingly commonplace, this paper considers how educators and industry can leverage the tools and systems of these mediums, to enable engagement and knowledge transfer between parties, with a view to informing industry from the lessons learnt. Virtual Worlds have become an extremely powerful phenomenon with millions of users. Businesses are only now beginning to acknowledge the benefits of using virtual worlds to enhance employee and supplier collaboration and to support new ideas and innovation through knowledge sharing across functions and organizational boundaries. Many businesses are still trying to understand the various implications of integrating internal communication systems with social media tools and private collaboration and networking platforms. The KNOWNET project (an EC funded Marie Curie IAPP) seeks to assess the value of virtual worlds and social networking for knowledge exchange across supply chains.*

### INTRODUCTION

The use of Virtual Environments for knowledge sharing and learning in Higher Education Students who study at a distance are separated both from their tutors and their peers. This poses general problems to all learners and significant problems to some. Social interaction - the sharing of ideas, discoveries,

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successes and failures and general social support - are often missing from the distance learning environment. Students frequently feel isolated, start to lose motivation, experience frustration or anger (Wheeler 2007), and a host of other unwelcome emotions, which may lead to dropping out of their course (Martz and Shepherd 2007). In online environments, Haythornthwaite, Kazmer, Robins, and Showmaker (2000) looked at how social cues such as text without voice, voice without body language, class attendance without seating arrangements, and students signing in without attending classes, impacted students long term motivation. They found that the likelihood of students 'fading back' is greater in distance online learning classes than in traditional face-to-face classes. Other researchers such as Hogan and Kwiatkowski (1998) and Hearn and Scott (1998) argue that the emotional aspects of teaching methods have been ignored in the distance environment and that before adopting technology for distance teaching, education must find a way to supplement the social context of learning.

When designing processes, systems and materials for distance delivery, lecturers must therefore consider not only knowledge sharing and learning outcomes, but also the issue of student isolation and its impact on motivation (Financial Times 2008). The task of the distance educator is therefore to prevent these problems by creating and maintaining a stimulating environment, and offering opportunities for students to communicate with each other and with teaching staff regularly. Lecturers may need to re-examine their traditional role purely as educators, to include a more facilitative and supportive role. In doing so, they will need to develop a new set of skills if they are to be effective educators.

In 2011, the authors developed and piloted a social interactive learning and support environment for a growing body of distance learning students in the School of Engineering & Design (specifically the MSc Engineering Management course) using virtual world grid technology and the platform 'virtual Brunel'. Virtual Brunel has been established as a teaching and learning environment for Brunel University since 2007 and has extensive 'holdings' in the virtual worlds of Second Life and OSGrid. The main objectives were to:

- Provide a learning and interactive knowledge sharing environment for a diverse student body undertaking Masters level education at Brunel;
- Develop a social networking community amongst the Distance learning students on the MSc Engineering Management to aid soft skill development, subject development, sharing of practical experiences around the subject matter, student support, group work, etc.;
- Measure the value added to learning from this implementation;
- Encourage staff and students to develop IT and 'social' skills to support the distance learning student;
- Support the learning and teaching objectives of the University (Brunel University, Priorities and Objectives, 2013);
- Share and disseminate the findings and methodologies of the project, and assess transferability to other courses in the School and University, and examine lessons learnt for industrial based learning.

The wider benefits, which included enhancing the online distance learning environment, are applicable to all forms of virtual learning. Indeed, there is much literature demonstrating the many benefits that Virtual worlds offer educational establishments, and have been used extensively by Universities and other teaching and learning institutions (Ishbel Duncan, Alan Miller, Shangyi Jiang 2012) with very

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